

# United States Patent [19]

Dahlen et al.

[11] Patent Number: 4,478,855

[45] Date of Patent: Oct. 23, 1984

[54] PROTEIN CONTAINING FRUIT DRINK AND  
PROCESS FOR THE MANUFACTURE  
THEREOF

[75] Inventors: Anne-Marie Dahlen; Olof B. S.  
Strinning, both of Stockholm,  
Sweden

[73] Assignee: Arla, Ekonomisk Forening,  
Stockholm, Sweden

[21] Appl. No.: 463,546

[22] Filed: Feb. 4, 1983

## Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 334,522, Dec. 28,  
1981, abandoned.

[51] Int. Cl.<sup>3</sup> ..... A23C 9/12; A23C 9/146;  
A23C 21/02; A23C 21/08; A23L 2/26

[52] U.S. Cl. .... 426/41; 426/42;  
426/271; 426/330.5; 426/583; 426/584;  
426/599

[58] Field of Search ..... 426/271, 330.3, 330.5,  
426/583, 584, 590, 599, 650, 654, 324, 41, 42,  
657, 651

[56] References Cited

## U.S. PATENT DOCUMENTS

2,681,858 6/1954 Stimpson ..... 426/583 X  
3,692,532 9/1972 Shenkenberg et al. .... 426/599 X  
3,852,496 12/1974 Weetall et al. .... 426/42 X  
3,862,342 1/1975 Maraulja et al. .... 426/599  
3,896,241 7/1975 Macaspina et al. .... 426/590 X  
3,949,098 4/1976 Bangert ..... 426/590 X  
4,200,662 4/1980 Sibelli ..... 426/590 X

4,212,893 7/1980 Takahata ..... 426/590 X  
4,309,417 1/1982 Staples ..... 426/590 X  
4,358,464 11/1982 Soehnlen ..... 426/271 X

## OTHER PUBLICATIONS

Morris, "Sweet Protein Syrups", *Food Engineering*,  
7-1980, pp. 35-36.

Primary Examiner—Arthur L. Corbin  
Attorney, Agent, or Firm—Larson and Taylor

## [57] ABSTRACT

A protein containing fruit juice drink comprising a fruit juice portion of 10-85% containing a citrus juice portion, a milk raw material portion of 90-15 percent by weight in which the milk raw material portion comprises whey proteins in an amount of 0.5-10 percent by weight of the finished product, and, as a sweetener, a hydrolyzed lactose, made of substantially pure lactose prepared from whey or a permeate from ultrafiltration of milk or whey, containing pure glucose and galactose derivate.

In the manufacture of the juice product of the aforementioned type a whey protein solution is prepared and the fruit juice is added while stirring the mixture. Hydrolyzed pure lactose is prepared by dissolving pure lactose crystals, obtained from whey or from a permeate of ultrafiltration of milk or whey, in pure water and hydrolyzing the lactose solution at a temperature of 60°-150°, whereupon the pure glucose-galactose product thereby obtained is admixed in the protein containing fruit-juice solution, whereupon the combined solution is pasteurized, homogenized, cooled and packed.

7 Claims, No Drawings